*CLASS COPY – DO NOT WRITE ON THIS!*

Honors Geometry

CW#4: Parallel & Perpendicular Lines

1. Consider the three equations listed below:

With your partner, do the following…

1. Make 6 observations about the three equations listed above. You may NOT graph these equations on your calculator or on paper. Simply consider the equations by looking at them. Your observations do not have to be about the equations individually; you can make observations about similarities/differences between equations or how you think the equations will relate to one another.
2. Graph the three equations on the coordinate plane below. Graph them in different colors.
3. Draw 4 conclusions about linear equations based on the equations and the graphs you draw.

|  |  |
| --- | --- |
| Observations: |  |
| Graphs: |  |
| Conclusions: |  |

|  |  |
| --- | --- |
| 1. Determine which lines, if any, are parallel or perpendicular:   Line A:  Line B:  Line C: | 1. Determine which lines, if any, are parallel or perpendicular:   Line A:  Line B:  Line C: |
| 1. A parallelogram is a four-sided figure whose opposite sides are parallel. *Explain* and *prove* why the figure shown is a parallelogram. | |
| 1. Determine whether the following statements are *always, sometimes,* or *never* true. If you say *sometimes*, provide an example when the statement would be false, and if you say *never*, correct the statement to make it true.    1. A horizontal line is parallel to the x-axis.    2. Two lines with positive slopes are parallel.    3. Two lines with the same slope and different y-intercepts are perpendicular. | |
| 1. https://grockit.com/blog/wp-content/uploads/2010/08/5.jpgMr. Gerber claims that all the following sets of lines are perpendicular to each other – meaning they form angles. Using your protractor prove whether Mr. Gerber’s claim is accurate. If it is not accurate, notate the measure of the angle formed by the two lines.   Image result for intersecting lines  Image result for intersecting linesImage result for intersecting lines | |

|  |  |  |
| --- | --- | --- |
| **For the problems listed below, write equations in slope-intercept form of the lines that pass through the given point and are parallel and perpendicular to the graph of the given equation.** | | |
|  | |  |
|  | |  |
|  | 1. Given the six lines listed below, identify which lines are parallel and which are perpendicular. 2. Line a: 3. Line b: 4. Line c: 5. Line d: 6. Line e: 7. Line f: | |
| 1. Graph the line perpendicular to line *AB* that passes through point *P*. What is the slope of each line? | 1. Graph the line parallel to line *AB* that passes through point *P*. What is the slope of each line? | |